LPKF ProtoMat S63
The All-Rounder for Rapid PCB Prototyping

Product: LPKF ProtoMat S63
Part no.: 127411
Ordering info: See front sleeve

Applications

- Milling/drilling 1- & 2-sided PCBs
- Milling/drilling RF-, microwave substrates
- Multilayer PCBs up to 8 layers
- Contour routing of circuit boards
- Front panels/sign engraving
- Machining cut-outs in front panels
- SMD stencil cutting (vacuum table required)
- Housing production
- Depanelizing, reworking PCBs
- Test adapter drilling
- Inspection templates
- Dispensing solder paste

High travel speed:
max. 150 mm/s (6"/s)

Available upgrade kit:
• ProtoMat S63 to S103

For more information about upgrades please see page 105 in the TechInfo.

The ProtoMat S63 is the ideal system for virtually all in-house prototyping applications where speed and security are crucial. It’s also perfectly suited for multilayer- and RF applications. The high rotational speed ensures the fine structures of up to 100 μm required by many modern applications.

The extensive features make the S63 the perfect addition to any development environment. The precision and performance of this compact circuit board plotter are the foundation for producing PCB prototypes in just one day.

- Fully automated operation
- High speed (60,000 rpm), highest resolution (0.5 μm) and repeatability (± 0.001 mm)
- Automatic 15-position tool changer
- Automatic milling width adjustment
- Optical fiducial recognition
- Dispenser option
- Upgradeable to ProtoMat S103
Features

Automatic tool change
Up to 15 tools are automatically changed during production. This reduces set-up times and allows for unattended production.

Automatic milling width adjustment
The conical milling cutters produce different insulation channels depending on the penetration depth. The automatic milling width adjustment maintains uniform PCB track widths.

Dispensing
The built-in dispenser applies solder paste onto the substrates fully automatically with minimum data preparation.

60,000 rpm spindle motor
The 60,000 rpm milling spindle ensures the shortest machining times and highest accuracy.

Upgradable to ProtoMat S103
Upgrade kit includes 100,000 rpm spindle and pneumatic non-contact working depth limiter (Part no. 127702) and vacuum table.

Options & accessories
- Dust extraction (Part no. 114647)
- Compressor incl. 50 l tank (Part no. 104863)
- Vacuum table (Part no. 127688)
- Status light (Part no. 120128)

Other options and tools start on page 19.

Applications

Multilayer PCBs
When it comes to manufacturing multilayer prototype PCBs the ProtoMat S63 is part of the basic equipment. A through-hole plating system (pg. 45) and a multilayer press (pg. 48) complete the set-up.

Housings
In addition to machining PCBs and signs the LPKF ProtoMat S63 will also machine, route-out and depth mill materials such as aluminum and plastic, e.g. in housings.

Technical Specifications: LPKF ProtoMat S63

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part no.</td>
<td>127411</td>
</tr>
<tr>
<td>Max. material size and layout area (X/Y/Z)</td>
<td>229 mm x 305 mm x 35/22 mm (9” x 12” x 1.4/0.9”)*</td>
</tr>
<tr>
<td>Resolution (X/Y)</td>
<td>0.5 μm (0.02 mil)</td>
</tr>
<tr>
<td>Repeatability</td>
<td>± 0.001 mm (± 0.04 mil)</td>
</tr>
<tr>
<td>Precision of front-to-back alignment</td>
<td>± 0.02 mm (± 0.8 mil)</td>
</tr>
<tr>
<td>Milling spindle</td>
<td>Max. 60,000 rpm, software controlled</td>
</tr>
<tr>
<td>Tool change</td>
<td>Automatic, 15 positions</td>
</tr>
<tr>
<td>Milling width adjustment</td>
<td>Automatic</td>
</tr>
<tr>
<td>Tool holder</td>
<td>3.175 mm (1/8”)</td>
</tr>
<tr>
<td>Drilling speed</td>
<td>120 strokes/min</td>
</tr>
<tr>
<td>Travel speed (X/Y)</td>
<td>Max. 150 mm/s (6”/s)</td>
</tr>
<tr>
<td>X/Y-drive</td>
<td>3-phase stepper motor</td>
</tr>
<tr>
<td>Z-drive</td>
<td>2-phase stepper motor</td>
</tr>
<tr>
<td>Dimensions (W x H x D)</td>
<td>670 mm x 540 mm x 840 mm (26.4” x 21.3” x 33”)</td>
</tr>
<tr>
<td>Weight</td>
<td>58 kg (128 lbs)</td>
</tr>
<tr>
<td>Operating conditions</td>
<td></td>
</tr>
<tr>
<td>Power supply</td>
<td>90 – 240 V, 50 – 60 Hz, 450 W</td>
</tr>
<tr>
<td>Compressed air supply</td>
<td>For dispensing function only: 6 bar (87 psi), 100 l/min (3.5 cfm)</td>
</tr>
<tr>
<td>Required accessories</td>
<td>Exhaust, please refer to page 21</td>
</tr>
</tbody>
</table>

* Value for Z without/with vacuum table

Technical specifications subject to change.